



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Takeuchi et al. :

Group Art Unit: 1774

Application No. 09/942,029 :

Examiner: Bruce H. Hess

Filed: August 30, 2001 :

For: HEAT-SENSITIVE RECORDING MATERIAL AND HEAT-SENSITIVE RECORDING  
PROCESS

DECLARATION UNDER 37 C.F.R. § 1.132

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

I, Koh Takeuchi, do declare and state as follows:

I graduated from the graduate school of Hokkaido University,  
Faculty of Science, Department of Polymer Science with a Master's  
Degree in Engineering in March 1986;

I joined Fuji Photo Film Co., Ltd. in April 1986 and have been  
working there since;

I have been involved in the development of materials for  
thermal image recording including materials for medical usage from  
July 1986 to the present at Fuji's Fujinomiya laboratory;

I am a co-inventor of the subject matter disclosed and claimed

in the above-identified application; and

I am familiar with the Office Action of April 15, 2003 and understand that the Examiner has rejected Claims 1-6 and 10 under 35 U.S.C. § 103(a) as being unpatentable over either of the patents to Suzuki et al., U.S. Patent No. 5,866,507 and U.S. Patent No. 5,952,263.

The following additional comparative experiment was carried out under my supervision in order to make the advantages of the subject matter more clear.

Experiment: Evaluation of Wearing Resistance of Thermal Heads

Two thermal heads (trade name: KGT, 260-12MPH8, manufactured by Kyocera Corp.) were prepared as Example E and Comparative Example C, such that Example E was further equipped with a carbon layer having a thickness of 2  $\mu\text{m}$  and a carbon content of 98%, as an uppermost layer.

As heat-sensitive recording materials, Example 1 and Comparative Example 1 were prepared in the same manner as in the Examples section of the specification of the present application, and moistures thereof were controlled by placement under conditions of 23°C and 50% humidity for 24 hours before carrying out the thermal recording test described below.

Example 1 and Comparative Example 1 were subjected to thermal recording using each of Example E and Comparative Example C at a head pressure of 10 kg/cm<sup>2</sup>, recording energy of 120 mJ/mm<sup>2</sup>, and a conveyance rate of 5.4 mm/sec for 1,000 m.

Before and after the above thermal recording tests, each form of Example E and Comparative Example C was evaluated at three points (namely, at a center position and at two positions respectively located 50 mm inward from both side ends) by scanning with a profiler (trade name: Model P-11, manufactured by KLA-Tencor Corporation) with a load of 5 mg at a scanning rate of  $20\mu\text{m}/\text{second}$  for  $2,000\mu\text{m}$ . Then, respective values of wearing at the three points were calculated for Example E and Comparative Example C, and an average value of wearing of the three points was calculated as an index of wearing for each of Example E and Comparative Example C. In this context, a low average wearing value means that less wearing of a thermal head has occurred, and that the thermal head therefore has high wearing resistance.

The results are shown in the following Table 2.

Table 2

	Example E	Comparative Example C
Example 1	0.08	1.5
Comparative Example 1	0.1	1.4

It is apparent from the above results that the example that satisfies the conditions of the present invention (Example 1 and Example E) exhibits superior wearing resistance.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under

section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE: July 10, 2003

Koh Takeuchi

Koh TAKEUCHI